BEFORE THE

# Federal Communications Commission

WASHINGTON, D.C. 20554

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| **In The Matter of** | ) | |
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| **Allocation of Spectrum Below 5 GHz Transferred From Federal Government Use** | ) | **ET Docket No. 94-32** |
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**To: The Commission**

**COMMENTS**
**OF**
**SR TELECOM INC.**

SR Telecom Inc. ("SRT"), pursuant to Section 1.415 of the Rules and Regulations of the Federal Communications Commission ("FCC" or "Commission"), hereby respectfully submits these Comments in response to the Notice of Proposed Rule Making ("Notice") adopted by the Commission on October 20, 1994 in the above-styled proceeding.[1/]

## I. PRELIMINARY STATEMENT

1. SRT is a Canadian manufacturer of digital point-to-multipoint radio equipment employed internationally to provide wireless, fixed telephone subscriber service, as well as supervisory control and data acquisition transport for industrial uses. SRT has many systems installed

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[1/] 59 Fed. Reg. 59393 (November 17, 1994).

throughout North America, including Canada and Mexico, as well as in Europe, Latin America, Pacific Rim countries, the Middle East, and Africa. SRT is now working closely with local exchange carriers in the United States with a view toward utilization of its technology to provide wireless loop services primarily in rural and sparsely populated areas. There are other applications foreseen in urban areas.

2. The Commission has proposed in this proceeding to designate for general fixed and mobile services three frequency bands that are scheduled for transfer from the federal government for private sector use.[2/] Based on Comments received in response to its earlier Notice of Inquiry ("NOI"),[3/] the Commission has identified several potential uses for this spectrum. SRT's equipment is designed for operation in several frequency bands between 1300 MHz and 2700 MHz; and, accordingly, it is particularly interested in the concept advanced by Southwestern Bell Corporation ("SBC") in Comments it submitted to the Commission in response to the NOI. SBC proposed that the

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[2/] 2390-2400 MHz, 2402-2417 MHz, and 4660-4685 MHz.

[3/] 59 Fed. Reg. 25589 (May 17, 1994).

band 2390-2400 MHz be paired with the band 2300-2310 MHz for a wireless loop service.

3. SRT strongly endorses the SBC proposal since pairing these two bands could provide an ideal allocation for wireless loop and other compatible services. As already explored in the Inquiry phase of this proceeding, heavy use of the band 2407-2417 MHz renders it highly undesirable for use in a wireless loop service or for similar industrial applications. SRT will have no comments regarding potential use of the third band, 4660-4685 MHz.

## II. COMMENTS

### A. The Bands 2390-2400 MHz and 2300-2310 MHz Should Be Paired for Wireless Loop Services

4. SBC described in detail in its Comments of June 15, 1994 the advantages to pairing the bands 2390-2400 MHz and 2300-2310 MHz for wireless loop service. Although SBC suggested that licensing in the band 2390-2400 MHz be postponed until allocation of the band 2300-2310 MHz could be completed, presumably some time after January 1996, SRT recommends that allocation of the band 2300-2310 MHz be accelerated so that additional services may

be made available to the public at an earlier date than might otherwise be feasible. Early introduction of wireless loop offerings will provide service to many new customers, some of whom have no service currently, at significantly lower costs than that which can be provided using conventional wire and cable plants. Wireless systems utilizing this paired allocation will permit the delivery of high quality digital telephone service with minimum delay. Maintenance is relatively inexpensive, and service can be provided over extended distances.

5. Pairing of these two bands will also avoid the potential requirement of having to use Time Division Duplex (TDD) techniques with all of the associated inefficiencies that are explained in SBC's Comments of June 15, 1994. The proposed pairing will facilitate use of other technologies such as Time Division Multiple Access ("TDMA"), which is already available in SRT products that can be deployed almost immediately upon completion of the necessary spectrum allocation and assignment processes.

6. SRT concurs with SBC that the quality of wireless loop service must be at a level that is at least equal to that of the current wired telephone network. SRT's global experience with other carriers and users underscores the

view that it is unacceptable to offer anything less than full network quality with at least the same capability to transmit voice, data and facsimile signals. SRT is sympathetic to use of the band 2390-2400 MHz by the Amateur Radio Service. However, SRT is compelled to concur with the SBC view that loop services cannot reasonably share spectrum with another service that employs high power RF equipment. Accordingly, SRT urges the Commission to dedicate use of the paired bands 2390-2400 MHz/2300-2310 MHz for exclusive wireless loop and other compatible services.

7. Existing use of the band 2402-2417 MHz for industrial, scientific and medical equipment, especially microwave ovens, renders that spectrum unusable for wireless loop applications since the level of interference can neither be estimated nor controlled. SRT has conducted interference tests in this band at several North American locations, and the results clearly substantiate the conclusion that the band cannot be used for quality telephone grade services. SRT believes these tests established, with a reasonable degree of certainty, that this interference emanates from microwave ovens.

8. SRT strongly recommends that the paired bands 2390-2400/2300-2310 MHz be used for all types of wireless

loop services. SBC described in its June Comments applications involving relatively small service radii on the order of one thousand feet. SRT believes that the Commission should adopt flexible rules that will not artificially limit the number of subscribers that can be served or the geographic area over which systems may be deployed. There is now equipment readily available, designed to be used in both restricted applications and for systems spread out over greater distances. Mixed use of the paired bands for a variety of point-to-multipoint systems can be accommodated with the use of normal engineering and frequency coordination techniques.

## B. The Commission Should Adopt Flexible Technical Rules for Use of the Paired Bands 2390-2400/2300-2310 MHz

9. The Commission discussed in paragraph 10 of the Notice its proposal to allow technical flexibility in the provision of any new services. In particular, the Commission proposed to allow users the freedom to choose their own channelization, signal strength, modulation technique, and antenna characteristics so long as those choices were consistent with not causing interference to other users. SRT strongly supports the adoption of flexible technical rules that will permit use of the paired bands for

providing voice and data services in all geographic areas with the use of point-to-multipoint TDMA technology. Consistent with the Commission's proposal, other technologies, when fully developed, and as appropriate to the wireless loop application involved in particular cases can also use these bands in a manner consistent with established sharing criteria.

10. Point-to-multipoint TDMA systems utilize proven technology specifically designed and employed for the purpose of providing wireless service to subscribers who are frequently located several miles from a central office. Generally speaking, these systems consist of three main hardware elements:

(a) A "Central Station" ("CS") located at and connected to the Central Office ("CO") either at a two wire or NxT1 level, depending on the capabilities of the CO. The CS transmits the continuous TDM signal on one microwave carrier that is received at all appropriate subscriber location areas.

(b) A "Subscriber Outstation" ("OS") which receives the TDM signal from the CS and transmits it back to the CS in burst mode on demand assigned TDMA basis in

conjunction with many other OSs in the network. The OS is connected directly to one or to numerous subscribers located in its vicinity. All OSs transmit to the CS on a common frequency, paired with one transmitted from the CS.

(c) A "Repeater Station" ("RS") that can receive signals from the CS and OSs, and regenerate and retransmit them without loss of quality or system capacity. RSs are used to extend the reach of systems to access more remote subscribers and/or to bypass physical obstructions.

11. SRT's equipment "divides" the microwave carriers in time to provide a number of digital circuits, or trunks, which are accessed on demand by a larger number of subscribers. SRT's system incorporates 60 trunks, each a full 64kb/s. A single system can connect nearly 700 subscribers with only a 1% blocking rate. Since these circuits are 64kb/s, subscribers are provided service that will support high speed facsimile and data without difficulty or limitation compared to wire or cable circuits. The use of 64kb/s trunks also permits, with only a change of the interface, the delivery of Basic Access ISDN (2B+D) service or multiple 64kb/s data circuits to any subscriber desiring such service. Since these systems are designed to work in difficult environments, they will continue to

operate unattended for many years with such low power consumption that their operation can be sustained with solar power units where commercial power is unavailable.

## III. CONCLUSION

12. SR Telecom Inc. urges the Federal Communications Commission to allocate promptly the band 2390-2400 MHz and, simultaneously, accelerate allocation of the band 2300-2310 MHz so that the two may be paired and dedicated for wireless loop and compatible services. Equipment is currently available that will permit use of this paired allocation to provide nearly immediate wireless loop service to residences currently without service, and to existing subscribers where cable plants must be replaced immediately. SRT provides point-to-multipoint TDMA technology that will operate in these paired bands and provide high quality telephone and data service to rural and remote subscribers who may be connected to the ISDN and information superhighway. Many of the difficulties encountered by telephone carriers in providing economical, high quality service to rural and remote subscribers can be a distant memory with adoption of rules that reflect the foregoing comments.

**WHEREFORE, THE PREMISES CONSIDERED**, SR Telecom Inc. respectfully submits the foregoing Comments and urges the Federal Communications Commission to act in a manner fully consistent with the views expressed herein.

Respectfully submitted,

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Dated: December 19, 1994